

REMARKS/ARGUMENTS

Without changing their substance, the claims have been rewritten in an effort to provide proper antecedent language and to set forth the claimed features positively.

Independent method claim 10 and apparatus claim 13 are respectfully submitted to be patentable under 35 U.S.C. 103(a) over the cited Kralowetz patent, in view of Staat et al, the secondary reference.

As is clear from the description, it is an essential feature of the present invention for the piercing mandrel 20 to be advanced during swaging in a direction opposite to feeding direction 3 of blank 2 to avoid fissures in the interior surface of the hollow body, due to the penetrating piercing mandrel. This requires the return of the piercing mandrel to its initial position between the successive swaging steps synchronously with the axial feeding of the blank between successive swaging steps.

Nothing like this piercing mandrel movement is suggested by the prior art. According to Kralowetz, piercing mandrel 28 is held **against** axial displacement by drive 29 while workpiece 13 is axially advanced against swaging tools 1 and is swaged. As shown in Fig. 2 (see also col. 3, line 33 et seq.), at the end of the workpiece, the right-hand end of the piercing mandrel engages an internal shoulder of sleeve 10 of the chuck so that the mandrel together with chuck 4 is carried along towards the swaging tools against the action of the hydraulic pressure in actuator 29 while the swaging tools continue operating continuously. Mandrel 28 is **not** advanced in a direction opposite to the feeding direction of the workpiece, nor is this possible because the mandrel is held stationary when the piston of cylinder drive 29 is in the retracted position (Fig. 1) and is then held by sleeve 10 against retraction. It may be noted that Kralowetz's piercing mandrel 28 is positioned upstream of the swaging tools while applicant's mandrel is positioned **downstream**, i.e. where holder 24 of Kralowetz is located.

In view of the above comments, it is believed to be evident that Kralowetz does not make the claimed subject matter obvious, nor do Staat et al suggest the same. According to

Staat et al, skew rolls 12, 13 roll hollow ingot 13 over plug 16 inserted in the hollow ingot. The skew rolls continuously advance the ingot so that an axial reciprocating movement of the plug would be senseless. Therefore, no combination of Kralowetz with Staat et al can suggest the claimed subject matter.

Accordingly, it is respectfully submitted that claims 10 and 13 are patentable over the art of record. The other claims depend thereon and recite preferred features. The claims are believed to be allowable with the claims whereon they depend.

A sincere effort having been made to overcome all grounds of rejection, favorable reconsideration and allowance of claims 10 to 17 are respectfully solicited.

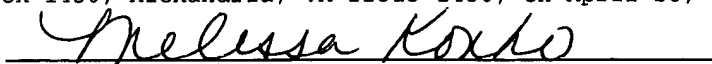
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